

AMATEUR TELEVISION MAGAZINE

**JANUARY
FEBRUARY
1980**

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25

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2.30

Our 13th Year

\$1.25

A5 ATV



WHEN THE FCC COMES TO TOWN

CONCLUSION: SATELLITE TV RECEPTION

DAVE INGRAM ON SSTV ACTIVITY

ARRL UPDATES ATV SECTION OF 1980 HANDBOOK!

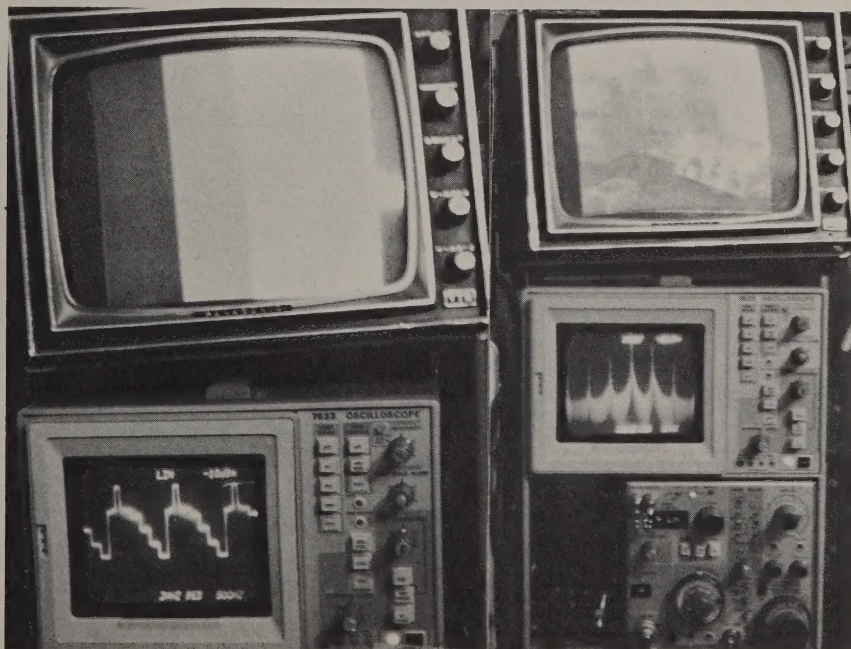
PHOTO REVIEW: OKLAHOMA SATELLITE TV RECEPTION CONFERENCE

BUILD: 450 MHZ ANTENNA

FIELD DAY ATV STYLE

VIDEO HOBBISTS PROMOTE HAM TV ON VIDEO TAPE

BELOW: PC ELECTRONICS TC-1 TRANSMITTER SHOWS ITS GOOD SIGNAL ON TEKTRONIX SPECTRUM ANALYZER. LEFT: DEMODULATED STAIRSTEP HAS EXCELLENT LINEARITY. RIGHT: FIRST SIGNIFICANT SIDEBANDS SHOW LOW NOISE, GOOD DEPTH OF MODULATION.



KLM Superior-Quality VHF and UHF Antennas

2 Meters...

Two-meter beams deliver maximum gain and clean patterns, with VSWR of less than 1.2:1 across the entire 144-148 MHz range. High grade insulating materials, weather-resistant aluminum boom and elements. 12, 14 and 16-element beams make outstanding moon-bounce building blocks.

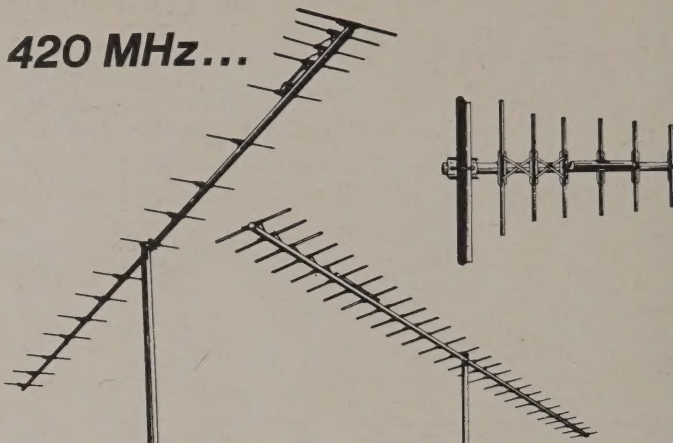
14-Element KLM-144-148-14 \$65⁹⁵

Gain: 14.2 dBd. Beam width at 3 dB pt.: 18 degrees. Feed impedance: 50 ohms balanced (KLM 1:1 Balun, 144-148-50 optional). Boom dia.: 1½". Boom length: 17.33'. Max. mast size: 1½". Center mounting. Wt.: 8 lbs.

16-Element KLM-144-148-16 \$72⁹⁵

Gain: 14.8 dBd. Beam width at 3 dB pt.: 16 degrees. Feed impedance: 50 ohm balanced (KLM 1:1 Balun, 144-148-50 optional). Boom dia.: 1½". Boom length: 20.66'. Max. mast size: 1½". Center mounting. Wt.: 10 lbs.

420 MHz...



A versatile series of KLM beam antennas in a variety of configurations: broadband rear-mount type for horizontal or vertical arrangement, ultra-high-gain DX type, and optimized long boom Yagi for narrow-band use. All have VSWR less than 1.2:1 across the entire band. Maximum mast size: 1½".

6-Element KLM-420-470-6 \$19⁹⁵

Frequency: 420-470 MHz. Gain: 8 dBd min. F/B ratio: 20 dB min. Beam width at 3 dB pt.: 30°. Feed impedance: 50 ohm balanced (Balun 420-470-50 optional). Boom dia.: 1". Boom length: 2'. Mounting: End or center; horizontal or vertical. Weight: 1.2 lbs.

14-Element KLM-420-470-14 \$31⁹⁵

End mountable; vertical or horizontal polarization. Excellent for repeater control. Frequency: 420-470 MHz. Gain: 13.7 dBd. Beam width at 3 dB pt.: 24°. F/B ratio: 20 dB min. Feed impedance: 50 ohm balanced. Boom dia.: 1". Boom length: 4.75'. Wt.: 4 lbs.

KLM Antenna Accessories

BALUNS

\$24⁹⁵
EA.
(Specify Band)

Sleeve baluns feature Teflon and low loss airline construction. SO-239 connectors with 144 and 220 MHz baluns; "N" fittings with 432 MHz. Many ratios available.

PLEASE ADD \$3.50 PER ANTENNA FOR SHIPPING AND HANDLING (CONT U.S.)...CREDIT CARD ORDERS MAY DISREGARD - WE WILL FIGURE EXACT COST

FAMOUS-NAME
BRANDS
IN STOCK...
FULL SERVICE
FACILITIES
TOO!



Model 43
\$125 + shipping

BIRD

... If you have been having difficulty locating the Wattmeter or element just right for you... You may have been looking in the wrong places. Our large inventory of most common elements lets you get what you want when you need it. Give us a call first for your BIRD needs.



SPECTRONICS, INC.

1009 GARFIELD
OAK PARK, IL. 60304
312-848-6777
TELEX 72:8310

HOURS

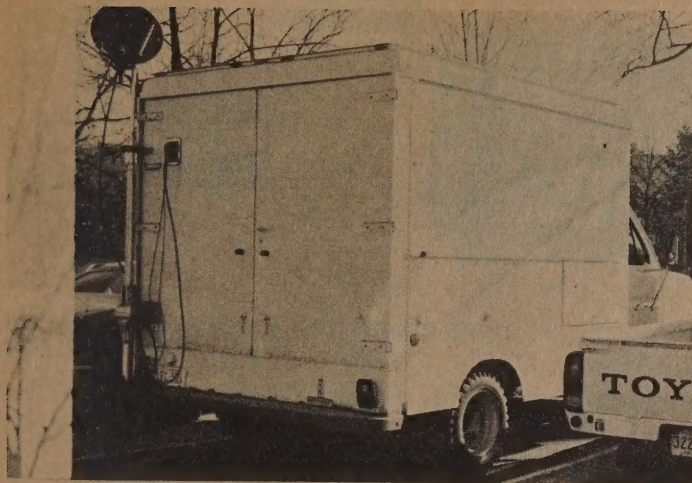
STORE HOURS:

Mon-Thurs 9:30-6:00, Fri. 9:30-8:00
Sat. 9:30-3:00, Closed Sun. & Holidays.

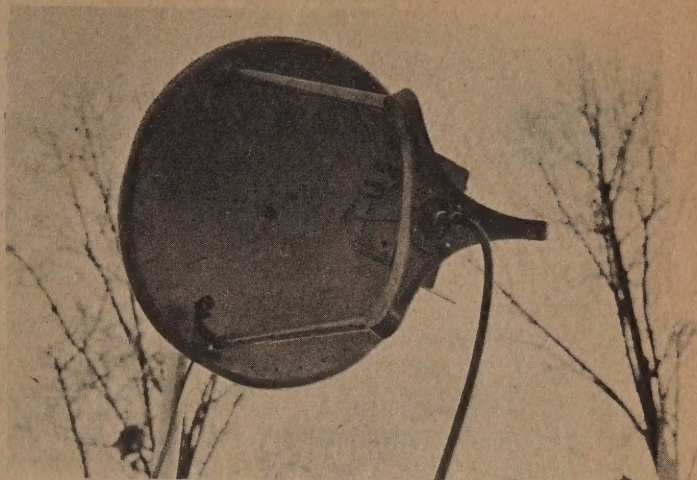


CLOSE ENCOUNTER OF THE FOURTH KIND!!!!!!!

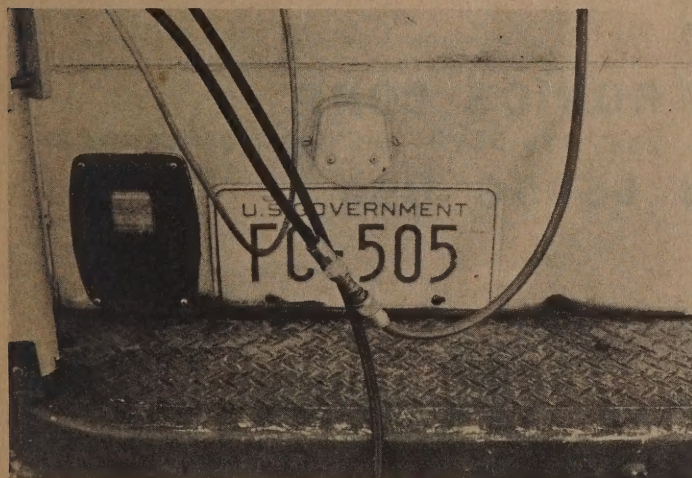
WHEN "UNCLE CHARLIE" COMES TO TOWN



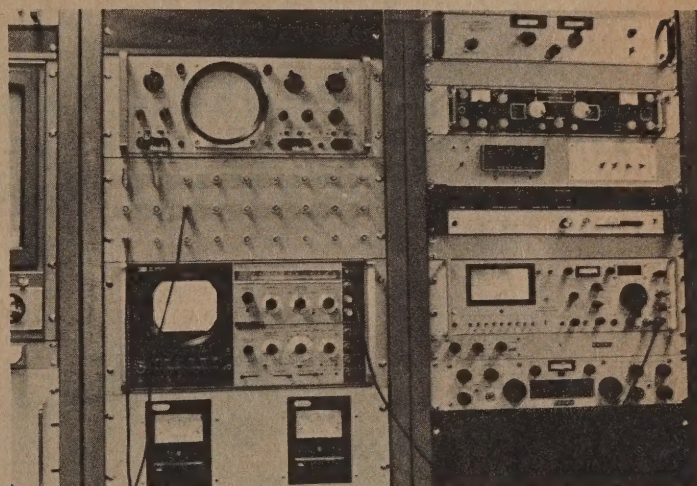
A strange radio equipped vehicle pulls into town.



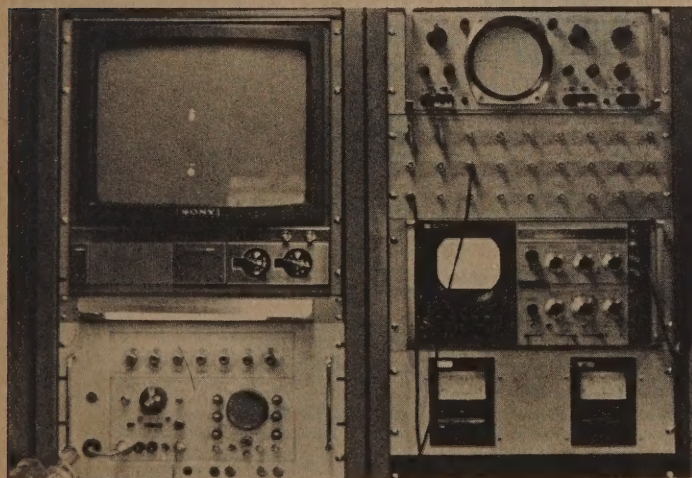
Closer look at truck's antenn....



"foreign" license plate



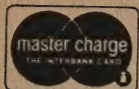
Yup. Its the FCC. and Here's part of what's inside



And more of what's inside!

Yes, the FCC is in town! No need to run and hide your station! These shots were taken during a recent "station inspection tour" of the FCC's field operation bureau". The FCC engineer was friendly, and while they do look for violations, they are also willing and able to give a lot of good advice about your operation, equipment, and ideas on how to avoid trouble in the future. The van is equipped to view and listen to any frequency in use, and can measure your signal for occupied bandwidth, frequency, stability, spurs, noise, frequency response, modulation/deviation levels and a host of other parameters. (Can't give you all their secrets!) This one is manned by an amateur radio operator who works QRP when off duty, and spent a few nights in town visiting local ATV'ers while "off" duty. "Mr. FCC" found up taking a TI Speak and Spell (voice (vomax) output toy) home because all us hams were using the device for artificial voices and such. Note, az,el rotor system, must be great for OSCAR contacts, hihi!

SPECIAL 12" B/W VIDEO MONITOR



\$99⁹⁵



#9308 - Here is a honey of a small B&W video monitor. A most attractive metal cabinet in simulated wood finish with a 12" diagonal measurement CRT. Controls on side of Contrast, Horiz. Hold, Vertical Hold, On/Off & Brightness. Std. SO239 Coax with 75 ohm termination. Measures only 14"W 12"H 11"D max. This monitor would be excellent for all fast or slow scan TV work, security & surveillance, computer readout, etc. Full transformer isolated power supply for 115/230V AC input. Made by Elston Elec. Corp. Model DM-10. Completely solid state except CRT. Std. shpg. wt. 35 lbs. W/sch. \$99.95

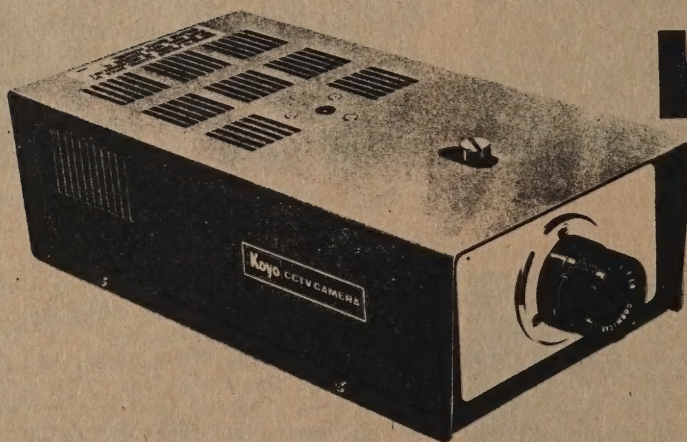
THE DENSON ELECTRONICS CORP.

OFFICE Longview St.

Tel. Area Code 203 / 875-5198

POST OFFICE BOX 85

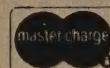
ROCKVILLE CONN 06066 USA



Koyo®

\$179⁹⁵

Less Lens



KOYO SOLID STATE CCTV CAMERA MODEL TVC-1000⁻²

Stock #9297 - Brand new Koyo solid state CCTV camera model TVC-1000-2. Uses a 2/3" separate mesh vidicon type 8844 for clean, sharp pictures, electrical/mechanical focus, 10,000:1 ALC with better than 600 lines resolution. Electronically stabilized focus coil. White clipper circuit keeps the signal within standards regardless of scene variation. Camera mounting screws on both sides, top & bottom. Video Bandwidth 7mHz, video output signal 1.0V p-p composite 75 ohm load. Illumination sensitivity 2.0 ft. candles with Fl. 6 lens. Standard C mount for lens. Power consumption 20W @ 120VAC 60 cps. Dimensions: 5 1/2"W 3 3/16"H 10 3/4"D, wt. 7 lbs. Regular price of this camera is \$256. less lens. A DEC Special only \$179.95 less lens.

Stock #9298 - Above camera complete with 25mm Fl. 8 lens only \$189.95

THE DENSON ELECTRONICS CORP.

OFFICE Longview St.

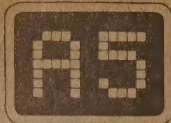
Tel. Area Code 203 / 875-5198

10AM - 3PM Monday, Tuesday, Thursday & Friday - otherwise by appointment.

MAIL

POST OFFICE BOX 85

ROCKVILLE CONN 06066 USA



DEVOTED TO HAM TV

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Amateur Television Magazine

P.O. Box 1347,

All correspondence to:

Bloomington, IN 47402

NEWS

THANK YOU ARRL !!!

No, I have not flipped out, but I do try to be fair, and must applaud the new 1980 ARRL Handbook as a much better effort than the 79 version. The 80 Handbook is in the same new large format, however, it has some definite improvements, including an updated portion on ATV. As you may recall, former issues has a long worn out half page on ATV from the stone ages. Last year, ATV, as well as the other fantastic modes of RTTY, FAX etc were left out, and we complained loudly! This year, I am pleased to say that the leaf has turned. Proud as a peacock, there are four pages (count'em) on ATV, including an abbreviated version of your scribe's article from the April 78 QST. Now, I am not just saying nice things because they re-printed my material (although I feel anointed from the provilage of appearing in the Handbook, even if the credit line is incomplete). I am most happy by the fact that there is any thing relevant to modern ATV operations in the Handbook. "It was a tough fight Ma, but we won!", more accurately describes my response. Now, how about someone out there producing a better and even more up to date segment for the 1981 Handbook? While what has appeared on its pages is a fantastic advance over past issues, we need to provide a better and more rounded ATV section for future Handboks.

The word from Geneva has also been good for hams, while not so good for some other services. As predicted, the battle for Satellite frequencies is hot and heavy. By the time this issue is in your hands, we should have the actual tallies of who gets what. It appears that we will improve our 160 Meter shares, as broadcastings expansion above 1600 Khz gets a drubbing and may not get past 1800Khz. 40 Mhz will shift down a little. Six meter fans can probably look for new countries in Europe. 70 cm's is the band in trouble, with the allocations being cut on a national scale (Canada will lose 10 Mhz from the bottom) while the US allocation will remain unchanged. As stated earlier on we are losing 1215-1250, maybe a little more to satellites. We may pick up one or two of the three new bands proposed, but they may well be limited to northamerica/europe as the southern hemisphere still likes HF for

broadcasting. All in all, we could have lost a lot more than we did, and the gains in exclusive use of some bands and the possible gain in new HF bands may have been a good tradeoff for the 35 Mhz of 1215. There is still lots of room for ATV on 450 and 1215. There is also the possibility that this will be the LAST WARC to consider the entire spectrum. There have been several mini-conferences over the recent decades to deal with Marine, Satellite and other issues, and we may see this trend continuing, with a once per 10 year mini conference to consider portions of the spectrum rather than all of the spectrum.

The National Weather Service has a new feature you might have seen on TV. The radar signal is relayed over voice grade lines in digital format to TV stations which store it in a mini-computer for display. While the commercial versions cost \$10,000-\$20,000 to play with the data, add overlays, expand quadrants, add a simulated "radar scan" etc, if you have a home computer with the ability to work with 400,000 bits of info in storage, you can get the WX radar signal also. The signal is generally available FREE, and users have had to buy the hardware to receive the pictures. The format is easily decipherable, and an amateur distribution system should be easy to generate since you could convert the TV signal to SSTV or FSTV. Contact your nearest NWS office to see if the signal is available to you locally. There is also a dial-up system to call radar displays in other areas of the country. The dial up system will not provide a continuous-updated radar picture (color) but is a one shot deal. Dedicated lines or radio link are necessary for a continous display which is the most common shown on commercial TV.

WE NEED MORE ARTICLES AND NEWS. Now that winter is here, and all you can work on is your frozen rotors (hi) how about putting some words on paper and sending it in???? ATV Magazine is what YOU make it!

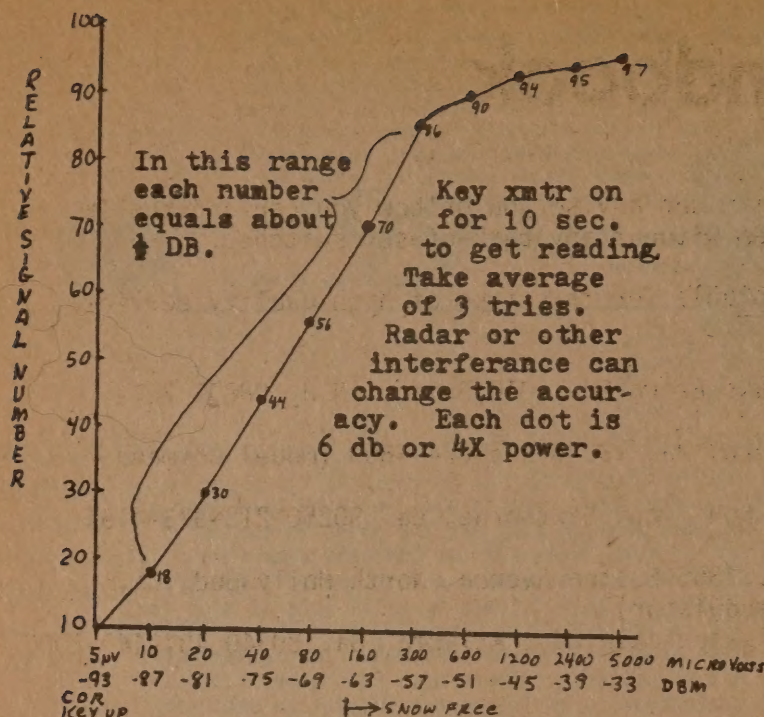
DON'T FORGET YOU CAN EARN A MASTER SCANNER AWARD for your SSTV activity. Also, its time to nominate stations for the GOOD IMAGE award, ATV in public service or major technical advancements which will improve our IMAGE.

Trivia: While Ham radio ranks shrank since our last issue, A5 subscriptions gained 5%. ATV is obviously a fast growing activity and gaining recognition daily. Tell your friends about ATV and A5. DAYTON 80 will feature a special sales promotion: ONLY AT DAYTON HAMFEST AT THE A5 BOOTH: Buy a three year subscription or renewal, and get a one year subscription for a NEW SUBSCRIBER...FREE. Look for us!

REPEATER NOTES

DE W6ORG

OCT 79



The graph at the left can be used to find how strong your signal is at the repeater. The number from 10 to 97 is just a relative one taken from a timed counter connected to the AGC line. The number is \pm one count, so try several times.

Some interesting results from checking the daytime vs nite time strengths: It seems that the daytime inversion is at or below the 2700 ft level of the repeater. For stations that are closer than 25 miles the signal is somewhat constant. But depending on the distance or more precise, the length of the signal path as it passes thru the inversion layer, the signal gets attenuated. Tests made at daytime vs night and

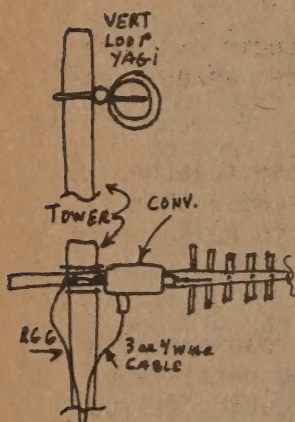
early morning show a almost 6 db drop at daytime at a distance of 32 miles. WA6PKX in La Jolla, a DX of 97 miles was 70 microvolts at night and zero at noon. Generally then for dx or hard to reach contacts the simplex during the day and repeater at night will be most reliable. We should learn more as winter approaches.

There have been some question as to how to mount the loop yagi for vertical polarization. For vert. the loops are positioned to come out to the side of the boom. I mounted mine with a U clamp to the mast about 6" behind the reflector. For added strength since you have to drill two $\frac{1}{4}$ " holes for the clamp is to first insert a $\frac{5}{8}$ " dia wood dowel down the boom. The dowel gives the added strength such that no angle strap is necessary for support. Also W6YBI noted that the many directors could take a little bending but the director couldnt. The gain varied greatly if the distance to the driven

element around the loop varied. Hugh also has it in the attic so the neighbors wont see it and the pigeons wont hit it.

The TVC-12 converter can get improved image and uhf tv rejection by adding a $\frac{1}{4}$ " long piece of #22 buss from the center of the type N input connector to the connector ground. We found two interfering freq related to the 434 transmitter output. The 3rd harmonic can be picked up at 1302 mhz and the 2nd (868 mHz) comes out at the image freq of 1231 mHz. To reduce it add more filtering at the xmtr or infront of the converter or more antenna verticle separation.

It was the opinion of those on at the time of the last trip up the hill to put in the color bar gen that the cross hatch pattern was better than color bars for alignment and testing so thats how it is now. Maybe later if someone donates it, the 16 patterns can be selected by touch tones on the subcarrier. Also We'd like someone to build and donate the two tube 100 watt 1296 amp from the 1971 ARRL Handbook. The basic system is up and running at great expense and time to me and I feel that any more should come from support and interest of the users.



Satellite TV Handbook

ble system') a local TV installation firm can advise you on how you can add the TV modulator channel directly to the system without any back-of-set switches.

Here are several TV modulators acceptable for this type of high quality service, and their sources:

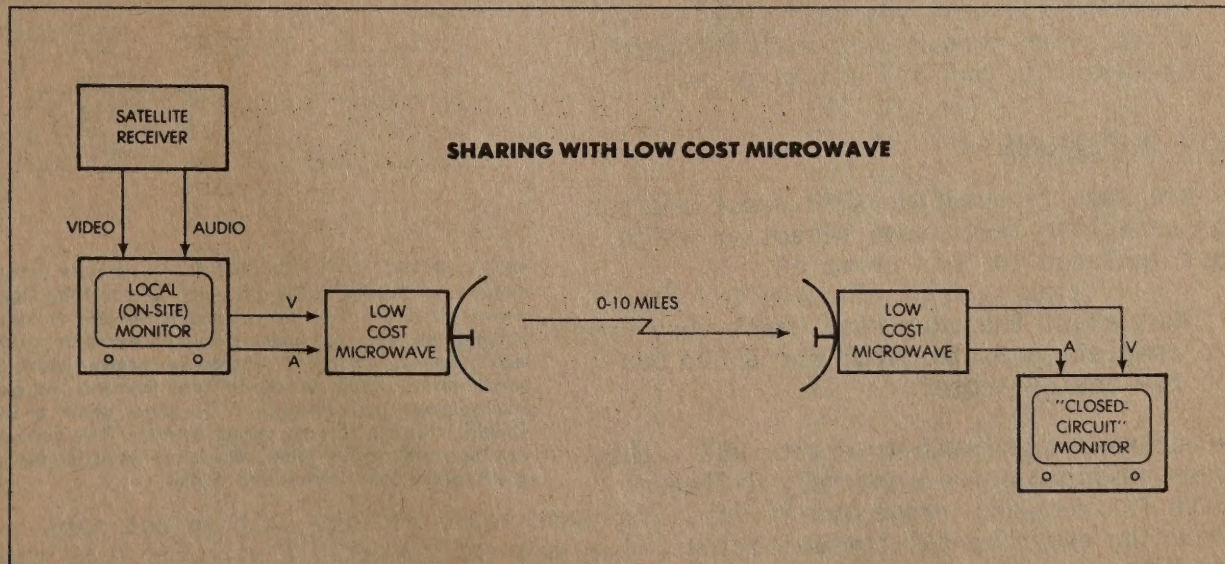
- 1) Blonder Tongue Labs, Inc., One Jake Brown Rd., Old Bridge, N.J. 08857 201-679-4000 (model TVM 4930)
- 2) Jerrold Electronics, Inc., Hatboro, Pa. 19040 215-674-4800 (model Commander III)
- 3) Phasecom Corporation, 13130 S. Yukon Ave., Hawthorne, Ca. 90250 213-973-4191 (2000 series modulators)
- 4) RCA Community Television Systems, 7355 Fulton Avenue, North Hollywood, Ca. 91605 213-764-2411 (model CTM10 modulator)
- 5) Scientific-Atlanta, Inc., 3845 Pleasantdale Rd., Atlanta, Ga. 30340 404-449-2000 (model 6350 modulator)

THE SHARING CONCEPT

While many 'enthusiasts' may wish to have this type of service in their own home and they have no desire to 'share it' with others, one of the most often asked questions pertains to the sharing concept.

If all parties involved in the proposed 'sharing' reside fairly close together, the least expensive method of sharing is to simply extend the coaxial cable that is carrying the programming from your TV modulator to your own receivers to neighboring

receivers. In most rural areas you can cross over or under streets or roadways with no particular legal problems. In suburban areas you will probably need permission from the city to cross over (or under) any of their streets with your cable. If you wish to 'string' your cable along by attaching it to existing utility poles you will also need to get their permission and expect to pay an annual rental per pole in the



ALTERNATE APPROACH TO SIGNAL SHARING—is low cost microwave re-transmission of the satellite delivered signal. Three part article appearing in October/November/December (1978) issues of POPULAR ELECTRONICS magazine describes such a 'low-cost' microwave system. System installation requires reasonable electronic competence.

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\$5 to \$10 per pole per year range. If you stick to your own 'block' and use back-of-lot lines and fences you can probably cover several neighbors without ever crossing a street.

Another more complicated system of sharing involves utilizing low-cost microwave relay. Just as there have been exciting things happening with microwave satellite TV transmissions in recent years, so has low cost private or personal microwave developed quite far in a short period of time. For the competent technician or engineer reading this pamphlet, it is suggested that you locate the October, November and December (1978) issues of POPULAR ELECTRONICS magazine. There you will see a complete 'low cost' (under \$750 for transmitter and receiver) microwave system capable of spanning distances of ten miles (or more with special antennas) with your satellite TV signal. The concept is that your satellite TV signals (video and audio) are plugged into a low power microwave transmitter which beams the programming on across the countryside. At the receive point (or points) low cost receivers are installed which hand back to you another set of video and audio signals; ready for viewing on a 'video monitor' or for feeding into a TV modulator for local (on premises) coaxial cable distribution.

Perhaps the easiest method of sharing is videotaping of the satellite programming and the sharing of the tapes. Unfortunately at the present time this approach has possible legal liabilities; as the TV GUIDE article (see TV Guide for October 21st) pointed out there are pending lawsuits concerning who has the right to tape TV programs and who has the right to share those tapes. On the bottom line;

- 1) It is today very illegal to tape satellite TV movies (from say HBO) and then

sell (rent, lease) those taped movies to others. This is a clear violation of the Copyright Act of 1977 and there are very stiff penalties for such activities.

- 2) If you tape and loan (without any charge) something you have yourself legally received, your jeopardy is with the pending lawsuits, not any existing law.

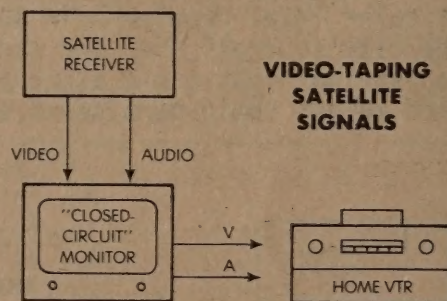
COMMON QUESTIONS

Here are some frequently asked questions concerning satellite television reception which were not included in this pamphlet:

- a) "What about the Japanese? Don't they have a complete home terminal for \$500? Can't I buy one of those?"

The Japanese terminals do exist. BUT - they have been designed for an entirely different satellite TV frequency range and if installed here would receive nothing but some uninteresting experimental communications. They are not compatible with the U.S. use of satellites at this time.

- b) "The Japanese terminals use very small (2 foot) antennas. Can't we use such



VIDEO TAPING SATELLITE SIGNAL—is perhaps simplest method of 'sharing' although legal right to tape signals and/or share the tape with others is subject of several pending law suits and users should be aware of possible legal jeopardy. Output of satellite TV receiver (video and audio) interconnects directly to video (camera) and audio (microphone) input jacks on VTR; either direct or after 'looping through' closed circuit monitor. This produces very high quality video tapes because of the extremely high quality of the satellite delivered signals.

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small antennas too?"

They get away with small antennas because their satellite frequency range is much higher than ours; where their two foot antenna works about the same as a ten foot antenna works for us. Again, not compatible.

- c) "What about the religious groups using the satellite for twenty four hour per day religious programming? Is there not some way to get that and share it in my town or area with others?"

PTL (People That Love / SATCOM F1, transponder 2), CBN (Christian Broadcasting Network / SATCOM F1, transponder 8) and Trinity Broadcasting (KTBN / SATCOM F1, transponder 14) are indeed operating 24 hours per day with religious broadcasts. All have been investigating getting the FCC to allow them to receive their programs via satellite at several hundred proposed locations, and then re-broadcast the programs out over a 5-15 mile area with low power (translator) TV stations. The FCC has not approved this concept yet.

- d) "I understand it is very difficult to get satellite TV equipment right now."

Impossible is a better word. Expect long delays (90-120 days minimum) between the time equipment is ordered and finally received. The industry has simply grown too far too fast and now with the advent of private terminals it will get much worse before it gets better. One a scale of 0-10 with 10 being the worst case, antennas are a 2-3, receivers are a 9-10 and LNA units are a 10+. Coaxial cable runs a 1-3, TV modulators a 4-6 and video monitors run a 3-5 (in most areas).

SATELLITE OPERATION AND LOCATIONS

The Radio Corporation of America (RCA) maintains two geo-stationary satellites for U.S. domestic relay of television signals.

RCA F1 (located 135.0 degrees west)

<u>Transponder</u>	<u>Service</u>	<u>Transponder</u>	<u>Service</u>
1	KTVU (San Francisco) *	20	HBO standby
2	PTL	21	RCA reserved
3	WGN (Chicago) *	22	HBO west
4	no service	23	HBO family
5	Star Channel (Warner) *	24	HBO east
6	WTCG (Atlanta)		
7	ESP (New England) *	<u>RCA F2</u> (located 119 degrees west)	
8	CBN		
9	Madison Square Garden	4	occasional video
10	Showtime (west)	8	NBC contract video
11	Star Channel (Warner) *	16	occasional video
12	Showtime (east)	17	occasional video
13	WGN (Chicago) *	18	occasional video
14	KTBN (Trinity)	20	occasional video
15	RCA reserved	22	occasional video
16	Fanfare	23	Alaskan video
17	RCA reserved		
18	Reuters *		
19	RCA reserved		

* - service date start 1-1-79 approximately

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WESTAR I (99 degrees west)

Transponder	Service
1	occasional video
2	occasional video
6	occasional video
8	PBS network video
9	PBS network video
11	PBS network video
12	occasional video

On a twenty four (24) channel receiver, the 12 transponder/channel satellites come in as follows (push button tuned receivers):

Transponder No.	Receiver Channel
1	1
2	3
3	5
4	7
5	9
6	11
7	13
8	15
9	17
10	19
11	21
12	23

WESTAR II (123.5 degrees west)

1	occasional video
4	occasional video
7	SIN (*)
12	occasional video

* - Spanish International Network

ANIK III (114 degrees west)

4	CBC network video (**)
8	CBC French television
10	CBC English television
12	CBC Northern Service

** - this transponder in use on an occasional basis for pre-network feeds between Toronto and Vancouver,

HOME SATELLITE TERMINALS—Information Center

Anyone seriously considering a 'private'/home satellite terminal should carefully review all available material before making equipment selections. **Thousands of dollars can be saved by the careful equipment buyer.** Thousands more can be saved by doing certain segments by yourself or with the help of friends. The following materials have been designed to help you learn more so that you are better equipped to save money on your own installation.

Video Tapes

TPI has prepared special 1/2" format video tapes that describe various aspects of the home satellite terminal installation and operation. Tapes are available on both Beta(max) format and VHS format. Order form on reverse side.

Tape HTS-1—"How The Home Terminal Works"—approximately two hours, takes the novice through every aspect of the terminal, shows operating system piece by piece and explains what each does; full color. Beta format \$60.; VHS format \$65.

Tape HTS-2—"Private Terminals Today"—approximately 70 minutes, interviews with leading Canadian, U.S. and English home terminal operators with accent on equipment development. Full color. Beta format \$40; VHS format \$45.

Tape HTS-3—"TV Terminal Technical Topics"—approximately 100 minutes, fairly high level engineering round tables discussing antenna designs, LNA installation techniques, receiver design. Best suited for technical person, excellent state-of-the-art discussions. Full color. Beta format \$50.; VHS format \$55.

Tape HTS-4—"How The Bird Flies"—approximately 70 minutes of a 'live tour' of the famous RCA Vernon Valley uplink/TTC/satellite control station. Features leading RCA engineers and interviewers demonstrating how satellites are launched, maintained and operated. Full color. Beta format \$50; VHS format \$55.

Printed Materials

EIRP Map Set—A set of 11 maps that show actual satellite signal contours for Canadian ANIK (III), U.S. WESTAR (II) and SATCOM (I and II) transponders; two color, important for determining how much signal level is available in your area. \$10.00 for set.

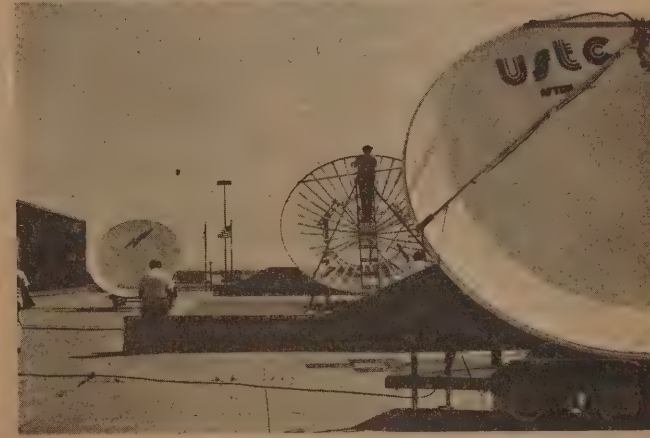
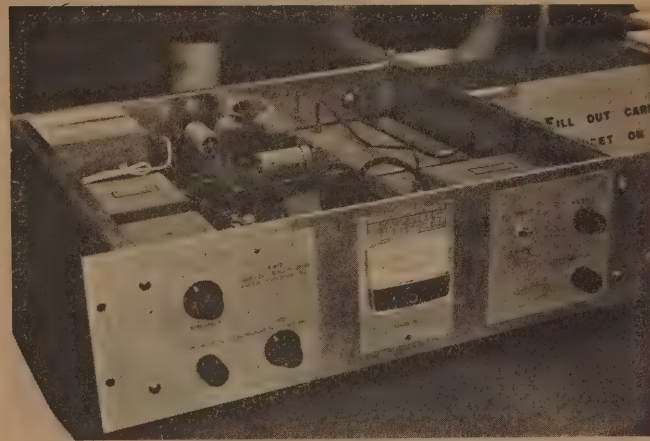
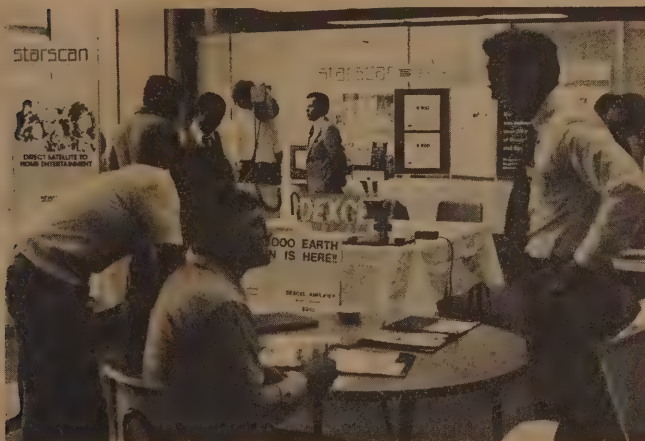
CATJ Magazine—The monthly 'bible' of the fast growing cable/satellite television industry. Covers all that is happening in all aspects of satellite program distribution, read in 50 countries worldwide. 12 issue subscription (U.S.) \$10.00.

Satellite Wall Chart—Large (22 x 35) four color two sided wall chart that explains all about television satellites, where they are, what they do and how to receive them. One copy, \$10.00; two copies \$15.00.

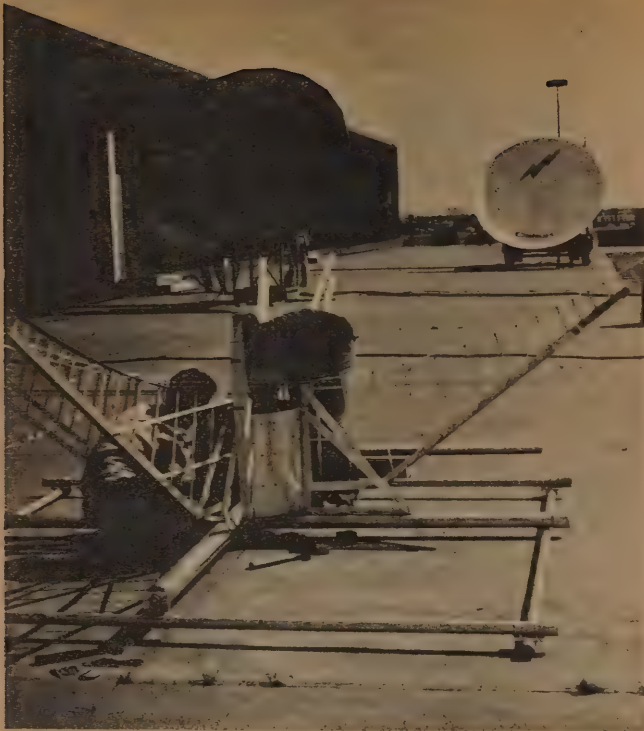

TVRO Terminal Handbook—A brand new 96 page (8-1/2 by 11 inch) high quality handbook that covers every aspect of designing, constructing, installing and operating a private satellite television receiving terminal. (Note: available 1-15-79) \$15.00 per copy in U.S.

Order Instructions:

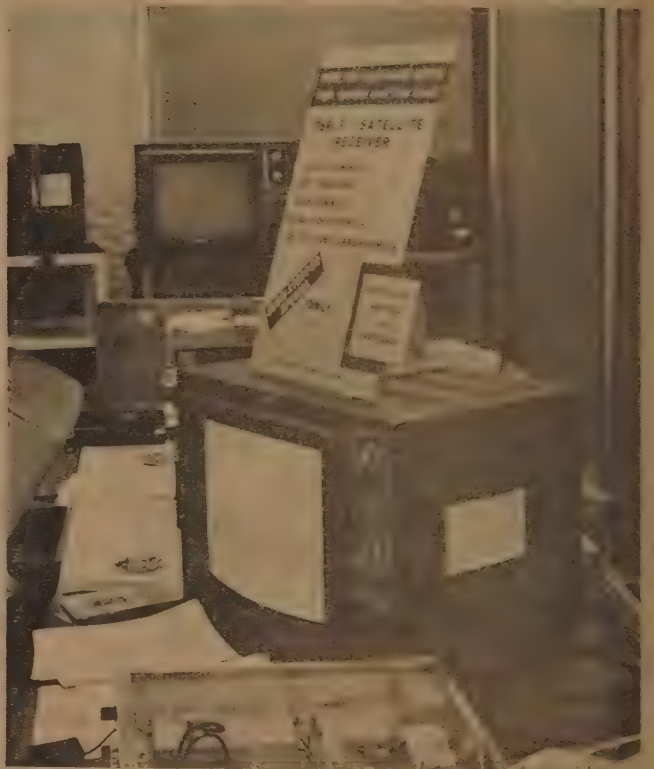
All shipments are via parcel post. All prices include postage inside U.S.A. and Canada. **Canadian's add \$3.00 per order** for all orders to cover special handling charges. Full payment **must** accompany order (make out check/money order to "Television Publications, Inc.") when placed. Sorry, no purchase orders or COD's.



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			(before Dec 24, 1979)			QTH			
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Please start with the _____ issue. (before Dec 24, 1979)

ZIP _____

450 TV ANTENNA

BY DIANE DEIBERT (WA6MVD-SUNNYMEAD) 07-22-79
REPRODUCED BY MOTOROLA SWT 6800 COMPUTER SYSTEM
ADDITIONAL COPIES AVAILABLE BY REQUEST.
432-MHZ, 15 ELEMENT, LONG BOOM QUAGI

CONSTRUCTION DATA.

BOOM- 1 INCH BY 2 INCH BY 12-FT DOUGLAS FIR.
TAPERED TO 5/8 INCHES AT BOTH ENDS.

DRIVEN ELEMENT-NO. 12 TW COPPER WIRE LOOP
IN SQUARE CONFIGURATION, FED AT CENTER LH OR RH,
SIDE WITH TYPE N CONNECTOR AND 52-OHM COAX.

REFLECTOR-NO. 12 TW COPPER WIRE LOOP, CLOSED
AT SIDE.

DIRECTORS-1/8 INCH ROD PASSING THROUGH BOOM.

ELEMENT LENGTHS--INCHES

R -28 LOOP	D7 -11-3/8
DE-26-5/8 LOOP	D8 -11-5/16
D1-11-3/4	D9 -11-5/16
D2-11-11/16	D10-11-1/4
D3-11-5/8	D11-11-3/16
D4-11-9/16	D12-11-1/8
D5-11-1/2	D13-11-1/16
D6-11-7/16	

INTERELEMENT SPACING--INCHES

R -DE -7	D6-D7 -12
DE-D1-5-1/4	D7-D8 -12
D1-D2-11	D8-D9 -11-1/4
D2-D3-5-7/8	D9-D10 -11-1/2
D3-D4-8-3/4	D10-D11-9-3/16
D4-D5-8-3/4	D11-D12-12-3/8
D5-D6-8-3/4	D12-D13-13-3/4

HIGHER GAIN CAN BE ACHIEVED WITH THE USE OF
A 1 TO 1 SLEEVE BALUN CONNECTED DIRECTLY TO
THE DRIVEN ELEMENT.

REFERENCE - FOR 1 TO 1 BALUN-SEE RADIO AMATEUR
HANDBOOK FOR BAZOOKA, OR, USE SLEEVE BALUN
SUCH AS (KLM-420-470-50) UNBALANCED TO BALANCED.

STACKING TWO QUAGIS FOR ADDITIONAL GAIN.
BOTH QUAGIS MUST BE FED ON SAME SIDE, AND
DRIVEN ELEMENT LOOP ATTACHED IDENTICALLY
TO FEED LINE OR BALUN.
FEED LINE TO EACH ANTENNA TO POWER DIVIDER
MUST BE 50-OHMS AND OF EQUAL LENGTH.
USE POWER DIVIDER SUCH AS (KLM-400-470-2)
SPACING BETWEEN BOOMS 5 FT 6 INCHES.

QUAGI APPROXIMATE 12-DB GAIN WITHOUT BALUN
QUAGI APPROXIMATE 14-DB GAIN WITH BALUN
QUAGIS STACKED WITH BALUNS APPROXIMATE 17-DB

Dear Henry,

Hi. I am surprising myself and you by writing.
Hope everything is well with you. The magazine is
looking great. Keep up the good work. Here are the
rest of the pictures of the "Field Day" on Catalina
Island by the Gould Amateur Radio Club.

The front cover of July- Aug. '79 A-5 needs
a little explanation; TOP LEFT, picture received
at Tom O'Hara's QTH (W6ORG) of Blackjack Mountain,
Catalina Island. Site of the June 23, 24, 1979
A.R.R.L. Field Day Contest of the Gould Radio Club.

The second top picture is of three visitors,
Mike (WA6SVT), Tom (W6ORG) and Clyde (WA6BAV)
who after seeing my picture decided to rent a
Piper and fly over to visit. But I think what
they really wanted was to try the ATVs ideal
mountain top location. Mike is talking via "landline"
(a telephone intercom to the second half of the
field day site just less than a thousand feet away.)
Tom is making some contacts via 434 Mhz ATV. Clyde
is relaxing after just making the cross country trip
from the Airport in the Sky with Mike and Tom to the
site.

The lower left pic shows the display at Knotts
Berry Farm that Mike and Clyde set up during hobby
week.

WA6YIE showing off his character generator.

Now for the true continuing story of ATV on
Catalina Island.

It started about a month before the field
day date, when we as the amateur radio club at
Gould, Inc. really couldn't come up with a good
site close enough to the plant and high enough
for the VHF UHF operation. On top of it, remote
enough so as it wouldn't end up as lovers hill
like it ended up last year. The usual go around
went on as any normal, re-newed A.R.C. has as to
making major decisions. A brainstorm hit me while
at work one day, "Why not ask, all I could get for an
answer would be a no", Right?

So I went into Ken Klippels office (the right
person to ask, W6FN) at the plant and popped the
question. "Ken, we have a company plane and a pilot,
Bob Dentice. Do you think it to wild an idea to have
Bob fly us lock- stock and barrel to Catalina Is.?"
Ken's first statement was a question "I wonder if
there's anyone else with the same idea, we wouldn't
want to have company." Ken got ahold of our company
pilot and asked the question. Bob said he would be
glad to but was scheduled to fly to Ohio at that
time. But... however... he did asked a friend of
his, Greg Johnson, who flew a simular plane as ours
and got a yes from Greg. We were as good as gone!
We now had a site and a plane, a Beech King Air A-90.

A special thanks to Ken (W6FN) for arranging
the legalitys, the site reservations. Bob (non-ham)
for taking a special interest in our endeavor.
Greg (non-ham) the pilot who flew all of us and gear
to the island. Greg, I think, must have thought we were
all crazy! 2 HF radios, 2-2meter radios, 220 radio,
ATV gear, ants, masts, 4 auto batterys, sleeping bags,
tooth brushes, etc... You know the rest. Oh yeah,
operators too.

And to Ken again,
THANKS for flying your personal, beautifully restored
Cessna. There was quite an over flow of gear.

NEW!

ANOTHER FIRST FROM:

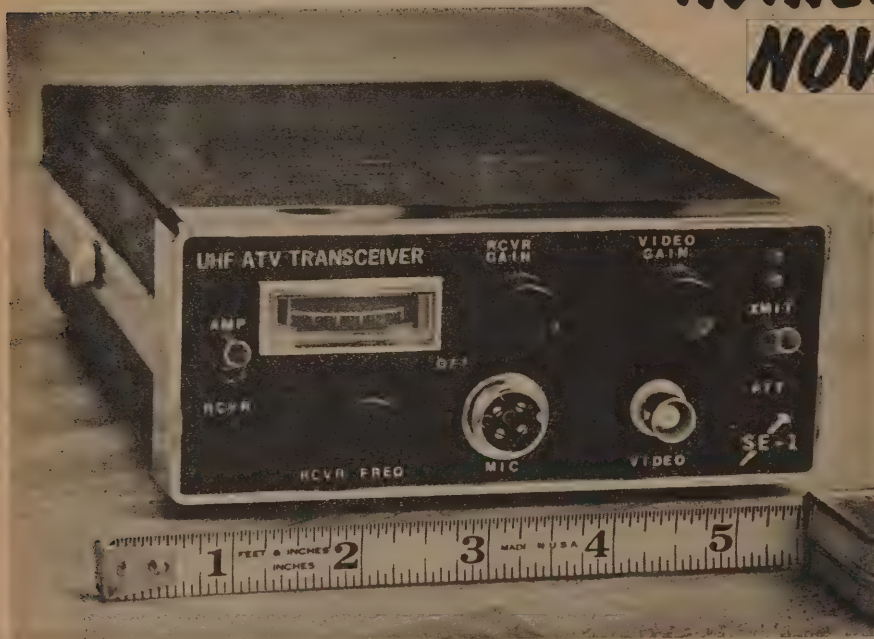
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COMPLETE

Just plug in Camera, Ant. & Mic.

Works with any T.V. rcvr.

Runs off your 12 volt pwr. supply or car battery.

Supplied with pwr. plug & cable, mic. connector & mobile mtg. bracket.

INTRODUCTORY PRICE
ONLY 349.95 + 3.50 SHPG.

TRANSMITTER

- 10 WATTS PEAK VIDEO POWER!
- BANDWIDTH FOR COLOR TV!
- CARRIER OR SUB-CARRIER AUDIO!
- MOBILE OR FIXED!
- 439.25 MHZ CRYSTAL (XMT.) SUPPLIED!

RECEIVER

- TUNES 425 MHZ THRU UHF CHANNEL 20!
- 2 TRANSISTOR LO-NOISE PRE-AMP
- 3 TRANSISTOR, VARACTOR UHF CONVERTER!
- FULL R.F. GAIN CONTROL!

ALL THIS IN A COMPACT 9½" X 5½" X 2½" PACKAGE!

FRONT PANEL CONTROLS:

AMP/RCVR sw. AMP. - meter reads xmt. current. RCVR. - reads varactor voltage.

RCVR. FREQ. - Rcvr. tuning

VIDEO GAIN - adjusts video level.

MIC. A.F. input (connector supplied).

VIDEO - BNC 75 camera input.

RCVR GAIN/OFF. - R.F. Gain, Pwr. On-Off.

XMIT/PTT SW. - PTT - SW. ON MIC. CONTROLS XMIT/REC.

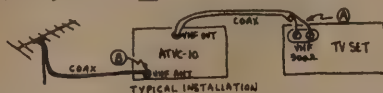
XMIT - OVERRIDES SW. ON MIC.

TUNABLE AMATEUR TV CONVERTER

ATVC-10



By connecting a UHF antenna to the input of the converter, and the output of the converter to the VHF antenna terminals of any TV set, the operator can see what the local hams are doing on a TV.



The circuit consists of a low noise, high gain RF amplifier stage with Varactor tuned input and outputs, an active (transistor) mixer stage with Varactor tuned input, and a Varactor tuned oscillator stage. Uses 3 transistors and 4 Varicap diodes. RF gain is adjustable.

The built-in AC power supply uses a transformer for power line isolation and 4 diodes in a full wave bridge. The supply voltage for the 4 tuning Varactors is regulated. The converter tunes electrically (no moving parts) from 420 to 450 MHz and outputs on channel #3.

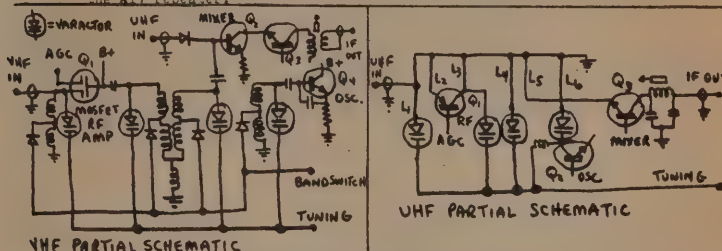
Notes: From ARRL Specialized Communications Techniques.

"Tunable converters are preferred over the crystal controlled variety, for several reasons. ATV is normally A. M. with two sidebands, rather than the carrier-and-one-sideband of commercial T.V. For the clearest picture it is helpful to be able to tune off to one side or the other of the ATV carrier, depending on the shape of the receiver i-f Pass-band, and local occupancy of the lower vhf TV channels".

The ATVC-10 comes completely wired & tested & guaranteed for 2 years. It is housed in an attractive 2 tone (walnut & beige) finished aluminum cabinet, only 1 7/8" X 4 1/4" X 4", with Full instructions Only \$59.95.

UHF/VHF VARACTOR TUNERS

The two tuners described below tune electrically (no moving parts) from approximately 50 MHz to 1 GHz (with a few gaps in-between). They are both HI-GAIN, LO-NOISE, STATE-OF-THE-ART tuners. They were manufactured for one of the leading manufacturers of Solid State Color T.V. They differ radically from conventional tuners since they are VOLTAGE tuned, rather than mechanically tuned. They both have double-tuned R.F. amplifier stages (a dual gate MOSFET in the VHF tuner). These tuners, in addition to their improved gain, noise and selectivity, provide increased tuning range (above and below conventional T.V. tuners) through the use of varicap diode tuning. This makes it practical to use the UHF unit to tune the 420-450 MHz ham band with no modifications. Similarly, the VHF unit can be made to tune the 6 meter, 2 meter and 220 MHz ham frequencies. Connecting the UHF unit in place of the conventional one in our TV set here in Bethpage, we were able to pick up the local ATV hams and the ATV repeater.



The frequencies that the tuners were designed to cover in their normal application are:

VHF: 54 to 89 MHz and 174 to 216 MHz
UHF: 470 to 890 MHz

Varying the Varactor tuning voltages above and below those used for tuning the VHF & UHF TV channels provides the additional coverage into the adjacent ham, public service, etc. frequencies. Isolating the tuning voltage to the oscillator varactor offsets it to produce IF output frequencies other than the 45 MHz Video IF normally used. We have been able to output at frequencies from 20 to 200 MHz.

These tuners have been successfully adapted to provide specialized, hi-quality receivers and converters over a wide range of frequencies - as well as in other diversified applications (such as the spectrum analyzer described on the opposite page). Also, as tuner-subbers, remote control tuning (a la Jerrold), mast-head converters (convert 450 MHz at the antenna and come down with 45 MHz to eliminate UHF transmission line losses), telemetering receivers, etc. They are supplied with diagrams for typical applications and sold with a MONEY BACK GUARANTEE.

Prices: UHF --\$37.95 ea. (2-\$15)
VHF --\$19.95 ea.
Combination (iea. UHF/VHF) \$24.95

RCA SOLID-STATE VHF POWER AMPLIFIER

Cat.#102 Commercial, mobile 150-170 MHz, brand new, completely enclosed 9"X 2 1/2" X 2" package. Contains driver & etd. mtd. power transistors, metering leads, solid state T-R switch & Lo-pass output filter. 100 MW in, 6-8 Watts out @ 13.8 Volts. Schematic & 2 Meter conversion instructions included. Only \$9.95.

Cat.#116 SYLVANIA MODEL 100 CATV-VHF TRUNK AMPLIFIER MODULE.

Specs: 50-270 MHz 0.2dB, Adjustable gain = 18-31 dB, Adjustable slope = 13dB, Power req. = 360 ma. @ 24V. D.C. Size=8 1/2" X 1 1/4" X 2 3/4" Has 5 stages of TRW ("windmill" style) R.F. power transistors. Typical noise figure at Chan. 13=9 dB. Covers all VHF-TV channels, 6 & 2 meters, VHF aircraft, public service, commercial F.M., etc. 75 ohm input & output, type "F" connectors. With Schematic, only \$9.95.

Cat. #104 PRECISION DIGITAL MEDICAL ELECTRONIC THERMOMETER.

Made for hospital use -cost approx.\$300.00 Range from 90.2°F to 106.9°F. Press & release button. Decimal point LED lights. After 35 seconds, warning beep signals temperature will be displayed for 10 seconds. Flashing decimal point indicates low battery, time to recharge. Shuts down automatically before lower voltage can affect accuracy. Contains 11 I.C.'s, 25 transistors, 20 diodes, audible alarm & 4 seven segment PIN-LITE displays. All parts have standard (2N,etc.) numbers. Can be used for it's original purpose or as the basis of many electronic devices. Substitute a carbon monoxide variable resistance sensor for the thermistor probe (data supplied) and tune your car! Operates on 6V. D.C. Complete P.C. board (as is) \$6.95, (tested) \$9.95. In alum. case, add \$2.95. Thermistor probes (with coil cord & plugs) \$2.75 ea. Charger base \$5.95.

With schematic & instructions for possible modifications.

Cat.#105 AS-IS 12" SOLID STATE T.V. P.C. BOARD

Contains Video & Sound I.F., Sound det. & output, sync, AGC, video, Hor. & Vert. osc., & Amp., M.V. Xfr, controls, CRT socket etc. w/ schematic. Approx. 8" X 6". Great for ATV's, Decoders, etc. Only \$9.95

Cat.#106 DIGITAL TV GAME BOARD

Brand new, tested. Contains 95 standard TTL IC's (no house numbers), Xtal (16.128 MHz) clock generates standard composite video & sync, character generator & counter circuits produce numbers. Sound effects circuits generate ping-pong sounds. No schematic. 5V. 2A. on board regulated supply. Just add filament transformer & paddle controls. Hook-up circuit & instructions supplied. Measures 9" X 17". Only \$7.95.

Cat.#107 AUDIO OR R.F. OPERATED RELAY BOARD

Monitor your favorite repeater (or CB channel) while listening to radio (or stereo). Speakers (1 or 2) are switched from radio to your rig when this electronic marvel senses audio from your rig. Holds it as long as there is audio & then returns it to normal operation. Also mutes the radio while transmitting, automatically eliminating the need for switching one unit on and the other off (senses R.F.). Operates on 12V. D.C. Instructions supplied. Brand new, only \$4.95

Cat.#108

RCA REGULATED DUAL SUPPLY

Two independent 150 ma. supplies, each adjustable from approx. 6 to 9 volts. Can be combined to supply 12 to 18 volts. Very low ripple. 9 transistors & 7 diodes. Transistor switched "power-on" light. Beautifully built, approx. 11"X5"X2" alum. package. 3 fuses. Instructions supplied, brand new-only \$14.95

Cat.#109

NEW ATV BOOK "ATV IN A NUTSHELL"

Everything you need to know to build & operate your own HAM TV station. Over 60 schematics, figures, diagrams & photos. Only \$5.00

Cat.#110

NARROW BAND F.M. CERAMIC FILTER SET.

Consists of 1- 10.7 MHz filter and 1- 455 KHZ Ladder Filter, as used in the E.F. Johnson UHF/VHF Scanner. Supplied with scanner schematic showing how to use them. Also ideal for "advanced spectrum analyzer" application, etc. Set, only \$9.95

Cat.#111

MAGNOVOX VIDEO I.F. STRIP

State of the art- MOSFET I.F. module. Ideal for building "off-the-air" T.V. monitoring & conversion receivers, etc. when used with our varactor tuners. With schematic, only \$19.95 Great for T.V. Decoders!

Cat.#112

ATV/VHF CONVERTER MODULE

New, UHF Varactor tuner, as modified for use in our ATVC-10 Tuneable ATV Converter. Input 420-450 MHz, Output TV channel #3 (61.25 MHz). Modified, tested & aligned-with instructions-\$19.95 (Tunes 420 to 900 MHz!)

Cat.#113

ATV CONVERTER REGULATED POWER SUPPLY KIT

New. P.C. board and all parts to build regulated supply to power the ATV/ UHF Converter Module. Includes trim pots for R.F. Varactor tracking & AGC, AC transformer, 3 terminal regulator, diodes, resistors, capacitors, etc. with instructions: \$12.95

Cat.#114

COMBINATION CONVERTER MODULE & REG. PWR. SUPPLY KIT

Consists of Catalog #112 and #113. Only \$29.95

NOTE: New I.F. strip for Spectrum Analyzer Kit in the works- old one sold out. Watch A5 for availability. Medium scan ATV strip also coming.

HOW TO ORDER:

Send check or money order - add \$1 to orders under \$15, or 5% over \$15. for shipping. N.Y. residents add tax. COD OK, need street address for UPS. Satisfaction guaranteed. Our products may be returned within 10 days for a full refund (less shipping).

SCIENCE WORKSHOP

Box 393, Bethpage, N.Y., 11714



Point Mugu Air Show

WE HAVE FINALLY ARRIVED

9 AM June 23, Saturday, we piled out of our planes. Litterally... HI. A beautiful day to have a field day! Greg had other commitments so he took off rather quickly. PICTURE NO. 1

The taxi (a V-W bus) of A-1 Taxi Service made two "Tijuana taxi" trips to the site. PICTURE NO. 2

I have never seen so much gear get set up so quickly, but we were officially on the air by noon. PICTURE NO. 3

The HF gear went on as well, going great guns.

As soon as I gave the call on 2 meters (146.43 Mhz- the calling frequency of the So. Cal ATV Club) the frequency lit up like ch. 7 on the CB band during skip conditions. HI. That afternoon and into the evening I worked 22 stations, one right after another. Talk about being a DX station, and ATV at that. I worked north to Santa Barbara down to the south to San Diego and everything in between.

The equipment was entirely run by auto batteries. Note the box under the card table. The transmitter is a VHF Engineering TX-432 strip driving a TRW MX-12-3 gain block. The receiver is a Sony 5" BW Mod. 5-307uw. An NEC 645 transistor pre-amp drove the PC Electronics double balanced mixer converter. I used two Javelin TV cameras Mod. SC-950. One was used for daytime with the standard 8844 vidicon. The other camera was set-up with a low light level silicon target vidicon, a 4833, for night time. A single Coleman lantern was used for lighting. Although for a while, for more demanding QSO's, I used a 100 watt light powered from the Willard-Exide battery through an inverter. This provided enough light for the S-T vidicon to see maybe 100 feet around.

The antenna was the famous Quagi, with 8 elements (measured 11.5 db. gain).

Notice pic no. 4. The fog ROLLED up the side of the hill sometime during the night. The picture shows it at about 7AM. Too late though, the fog condensed on everything, water was dripping off of the cables and spilling out of the mikes. But the disaster was the VHF Engineering TX-432 strips arco compression trimmers were soaked, salt ocean fog. I was off the air. The mica was contaminated. Dried out it just wouldn't go. The Sony came on after the Coleman lantern aryed it out. So I was able to at least receive more stations Sunday.

Moral of the story, take plastic bags with you for field day.

I missed about 10 more contacts on Sunday mourning because of this stunt.

Moving on, picture 5. Tom (W6ORG) took this of me from his QTH, Arcadia.

Pic 6; "Lee" W6ZMI seen from Catalina Is.

Pic 7; "Carl" W6SGE

Pic 8; "Doug" K6KMN

Doug has a job in which for 3 days a week he runs a 40 kw TV transmitter and a 40 watt ATV transmitter from L. A.'s Mount Wilson (a 5720 ft. mountain north of L.A. which contains the majority of the commercial TV and FM transmitters). So with his 5710 foot antenna he does demand an audience. HI

All in all, it was a very fine field day. I couldn't ask for any more. Thanks guys in the L.A. and vicinity areas for helping make it all a success.

Oh, as for the ARRL score on the rest of the modes. Gould got second place in the 6A category out of the three entrys. Oh well. Better luck next time.

The log of operations is enclosed.

So. Cal. ATV Club

October 12th through 14th found a group of So. Cal. ATVers at the Point Mugu Air Show with two color tv cameras and VTR's. The group consisted of Clyde (W6BAV), Steve (W6BJP), Mike (W6SVT), and myself. We were invited to join the Point Mugu Amateur Radio Club as a joint effort Ham Radio demo during the show.

There were over 20,000 people there to enjoy the static displays, F-14 Tom Cats, F-15's, F-8's, Orion sub chaser, the Nimrod a new English 4 engined jet (designed to fly at high subsonic speed and high altitudes to a particular search area. Then make low-speed, low level patrol and a fast return to base.) Well any way, the Blue Angels were on hand too to thrill us to pieces.

The set up was to have a TV monitor in clear view of the public, fed with two video sources, one on the roof of the building in picture no. 1. The other down the runway linked to (picture no. 2) a RV (pic no. 1). (Pic no. 3) Clyde is shown here at the controls, switching between the two color cameras NBC style. We used 146.43 Mhz as the camera com. link.

The people at Point Mugu were really nice and were extremely helpful in getting us set up. Special thanks go to Don Muhn, Rich Anderson (N6AHI), and Bill Yates. In all about a dozen guys were involved both civilian and Navy. A word about Rich, "AMAZING". He has uncanny ways to aquire things and places. Usually, the military moves, if at all, very slowly and Rich was able to make the system work for him. Thanks Rich, for making the impossible happen.

The edited tape will be sent to the base commander (who's a new ham) for his library. The other photos represent the type of shots we were able to tape.

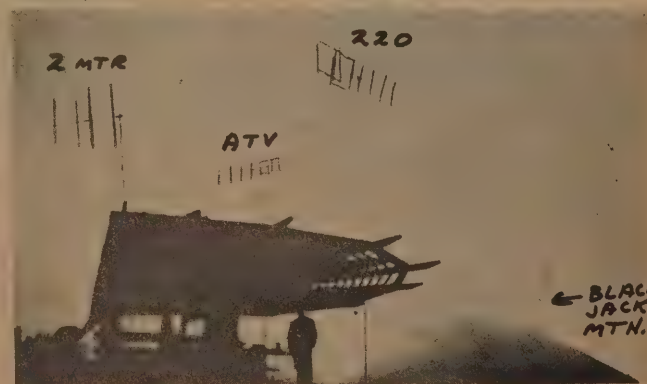
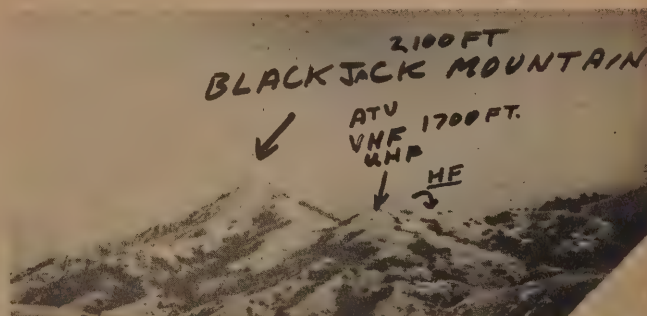
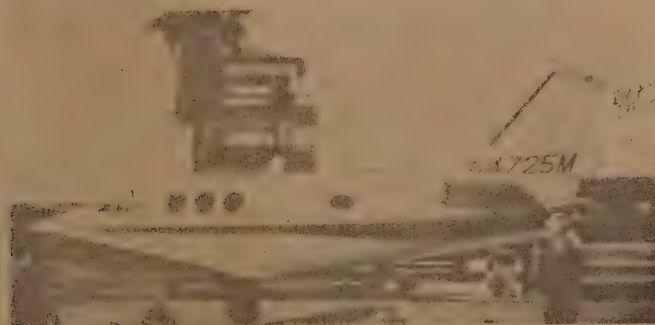
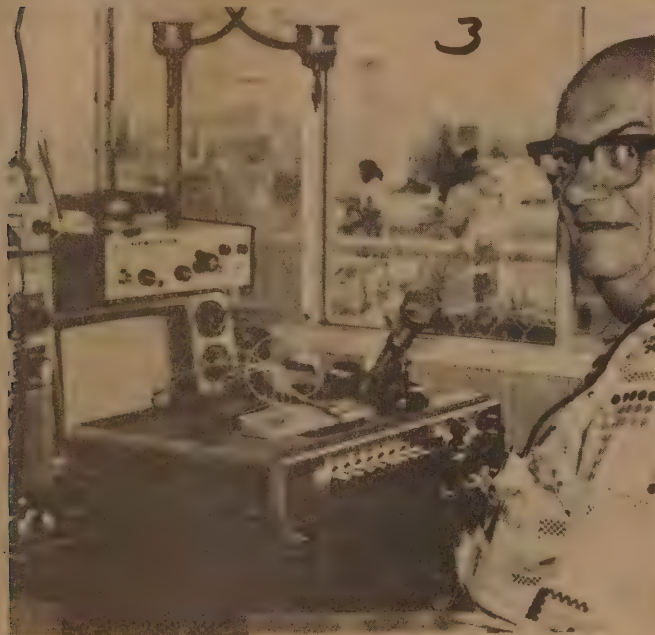
One word of advice, if you plan to video tape an event such as this, be in good physical shape to hand hold the camera. The camera can not be used on a tripod. Those planes move too fast. HI..

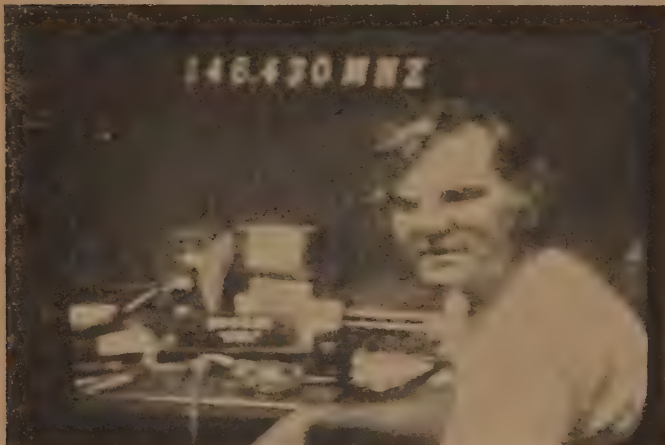
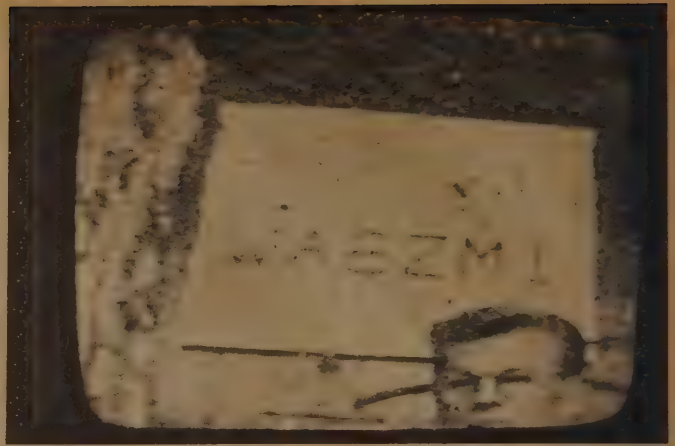
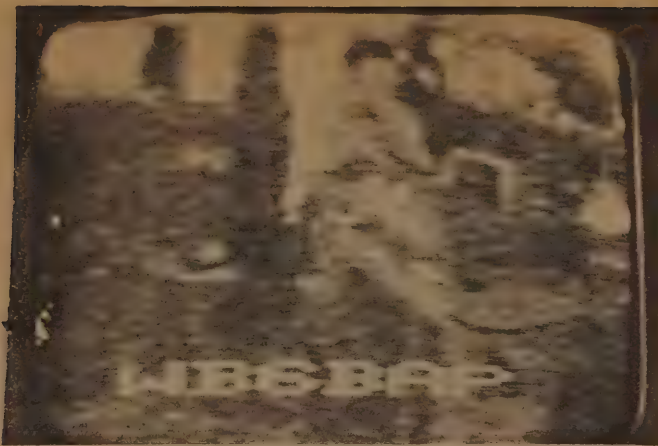
Next event is the Tournament of Roses Parade and a 4 color camera coverage. If all goes right we will be able to give coverage of the route for the parade co-ordinator, this will enable him to keep visual track of any float breakdowns. so 73's for now.....

W6BAP



Continued





WIN A ONE YEAR SUBSCRIPTION

or renewal. Best caption for the photo at left received by Jan. 30th, 1980.

HELP! HELP!

We are down to the last copies of ATV in a Nutshell. Should we print it again? Re-print with updates? Produce Nutshell Vol II with mostly new material? Produce a more advanced book? You tell us! Also which would you buy? Which would you help with by contributing new material??? We have had continuous orders for ATV in a Nutshell, and many good comments and while it was our first effort, we know it had some minor problems that we didn't have time to get out before it hit the presses in time for Dayton Hamfest, our media blitz and such. These have been identified and we could simply produce a better Vol I, or forgo vol I and produce one of the above. What do we need? Another "novice" get your feet wet or more advanced material, or a combination??

FOR SALE

PROFESSIONAL TV CAMERA LENSES:

Zeiss, Kodak, Pentac, Wollensak 35 mm mount TV or film lenses. 20 in all.

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| 1, Kodak F 3.3 35 mm | \$10 |
| 7, Kodak F 1.9 50 mm | \$10 each |
| 1, Zeiss F 2.8 75 mm | \$25 |
| 1, Wollensak F 3.5 75 mm | \$25 |
| 2, Ilex F 3.5 75 mm | \$25 each |
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| 1, Wollensak F 3.5 90 mm | \$50 |
| 1, Tesar F 2.8 80 mm | \$40 |
| 3, Kodak F 3.8 135 mm | \$75 each |
| 1, Pentac F 2.9 200mm | \$100 |
| 2, Ilex F 3.9 215 mm | \$100 each |

YOU TELL US

ZOOM ZOOM ZOOM

2, Varotal V F4 40-400 zoom plus 1.5 X range extenders, remote control focus, zoom, with mounts. missing 1 cable (one complete system, one system missing one cable) with mount. \$1,000 each
All lenses are good to excellent condition. Can be adapted to most cameras, use for enlargers, telescopes, etc.
Also all are shipped freight collect, or include enough for shipping, well packed. All can ship via UPS. Henry KB9FO, Box 1347, Bloomington, IN 47402

Our thanks to Jane Veeder (who supplied last issue's front cover photo) and Phil Morton of the Electronic Visualization Center, (S. A. I. C. video area, Jackson at Columbus, Chicago, IL 60604) for making a great video tape about ham TV. They call it program 9, apparently, they have many programs on different topics, and they send the tapes to other groups and vidiots thus exposing many aspects of the new video culture not often available to large segments of our population. Here is the "promo" sheet they send out which pertains to the Ham TV program. Besides, if they quote A5, they must be right-!!!!!!!!!!!!!!!!!!!!

-----PROGRAM #9 (Amateur TV)-----

Jane Veeder and Phil Morton
contelligently communicate the
ELECTRONIC VISUALIZATION CENTER
television research satellite
orbiting Art Institute Corporation
Chicago 1976-84 (312/666 5628).

"Phil and Jane of Chicago took some nice video tapes at Dayton of the various ATV demos and displays/fleas. They were nice enough to send a special copy which has some extra added video effects added and has been well edited for presentation. It will be available for showing at the various conventions A5 attends if a local OP will supply a U-Matic (Sony 1600 or similar) 3/4" tape machine and monitor. They are video hobbyists and not into ham video and have exhibited some real creative talent including a video computer controlling the effects used in making the tape." - Henry Ruh KB9FO A5 Magazine

We went to the 1979 Dayton Hamvention to research the perceptual environment of FCC licensed Amateur Television (ATV). We think ATVers are what Gene Youngblood calls an "alternative reality-community"; ATVers are a special interest group whose use of television technologies constructs a reality that is an alternative to that of our four American broadcasting networks. PROGRAM #9 is a simulation which expands upon our experience at Dayton as NEWS reporters immersed in the signal-live environment shared by the ATV reality-community.

PROGRAM #9 primary technical resources: a Sandin Image Processor (analog computer), Bally Arcade Home (digital) Computer, Panasonic 3/4" Videotape Editing System, Chevy Van

-----HOME COMPUTER
VIDEO SYSTEMS-----

PROGRAM #9 is offered in two directions: One, it is a perceptual research report giving those unfamiliar with ATV our sense of how the 'amateurs' communicate with LIVE television; Two, it gives ATVers, who were so generous with their images, a view of our "shack" and our perceptual processing of their signals interjected with images of our future-fantasies of breature communications.

-----"WE ARE EXPANDING THE HORIZONS OF AMATEUR TELEVISION!" - H.R.-----

We are using light weight audio/video technologies with analog/digital computers to research and present a model of personal participation in the television image life of our culture.

-----"One (slow scan) station I know does a regular weather report complete with pictures he receives direct from the (weather) satellite."-----

- Dave Smith, Robot Research

-----PROGRAM #9 (Amateur TV) is one in a series of subject dependent research reports from our electronic-and-geographic field developments.-----

FOR FURTHER INFO ABOUT ATV, we recommend: A5/Amateur Television Magazine, Henry Ruh, Editor; 7391 West State Hwy 46, Ellettsville, IN 47429.

-----GOOD LUCK ELECTRONICALLY VISUALIZING YOUR FUTURES!-----

CQ SSTV DE K4TWJ

DAVE INGRAM

Contributing Editor
Amateur Television Magazine

Eastwood Village No. 1201 South
Rt. 11 Box 499
Birmingham, AL 35210

SSTV POPULATION GROWING

If you have been monitoring the popular Slow Scan TV frequencies, you've probably noticed our ranks are increasing at a phenomenal rate. 14,230 kHz is alive with Slow Scan activity almost every minute of the day and night, and 28,680 kHz activity follows quite closely whenever 10 meters is open (which has been from sunrise until mid-evenings lately!). I haven't noticed a substantial amount of SSTV activity on 40 or 15 meters. Maybe some of you can correct me concerning this, eh?

Another situation I've noticed is an increasing number of 1 to 1 SSTV QSO's and a consequent decline of "video roundtables". Possibly this is due to each of us snapping fast returns without allowing time for others to join in or maybe it is due to accidentally forgetting to include "breakers" into the activities. Maybe the Saturday SSTV Net is fulfilling this purpose. Whatever the situation, let's encourage more "video roundtables" during evening SSTV activities. We'll all benefit by the increased number of SSTV views, and maybe it will encourage both newcomers and old-timers to rejoin the fun rather than quietly monitoring the activities.

I'm personally somewhat shy about entering SSTV QSO's when I don't know either party, but I don't feel comfortable moving up frequency and calling CQ either. Then I feel as if I'm missing part of the action. Maybe we can start a nationwide drive to conduct 1 to 1 SSTV QSO's "up frequency" from established spots like 14,230 kHz, and "roundtables" on the established spots. This isn't insinuating non-use of established spots. Indeed not! It's merely suggesting such QSO's openness to group participation. If you're looking for someone, you can meet them on, say, 14,230 kHz: someone on that frequency can pass along messages if you miss your party(s). If you like this idea, pass the word. If you don't like the idea, write me a note... or leave word on 14,230 kHz. I'll probably be listening and watching until an old-fashioned SSTV roundtable gets underway.

QRP SSTV

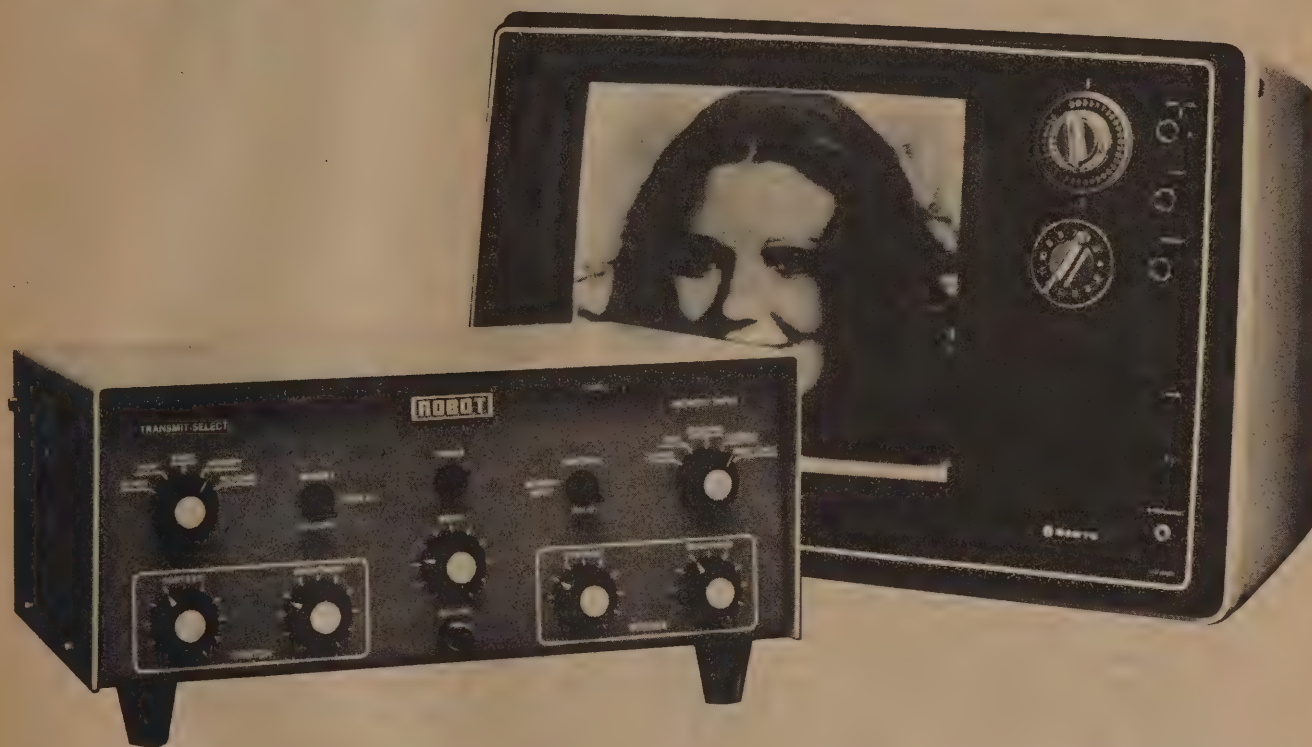
How much power do you run on SSTV.....50 watts - 100 watts - 400 watts - more? Maybe that question should be changed to ask how much operating time do you get from your final amplifier tubes and/or transistors....less than 6 months or more than 3 or 4 years. It's a well known fact the 100 percent duty cycle of SSTV transmissions places heavy demands on RF amplifier stages, yet the number of unnecessarily strong Slow Scan signals on 20 meters seems to indicate a lack of energy consciousness among the involved parties. Tisk, tisk. High power levels are not always necessary for successfulSlow Scan communications. I've personally contacted close to 100 countries via SSTV, and I've never run over 100 watts output on SSTV. It's a great feeling knowing there's plenty of extra power available should I need it during a crisis or emergency (and it's also reassuring to look over my 3 spare sets of finals waiting their turns in the rig), but a few watts of RF usually suffice for my video transmissions....and the gear runs nice and cool. If you think high power is necessary for reliable communications, review some of Adrian Weiss, K8EEG's, QRP columns in recent issues of CQ or recall the late Bob Howell, WA7QBV/N7TV's, Worked All States SSTV using a mere Argonaut 509 5-watt transceiver. Our high frequency bands are presently "blowing apart" with good propagation conditions (particularly

ROBOT

SSTV

MODEL 400

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ALL SOLID STATE DIGITAL RANDOM ACCESS MEMORY SSTV SCAN CONVERTER

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- Permanent picture storage
- Automatic or manual TV frame snatch

- Internal gray scale generator precision adjustment standard
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Now you can operate SSTV by just adding the Robot 400 to your existing station and converting it to your home TV station with a Robot RF Adaptor Kit. And you'll be joining over 13,000 active SSTV'ers in one of the fastest growing activities in amateur radio.

ROBOT

ROBOT RESEARCH, INC.
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(714) 279-9430

10 meters....5 watts will work the world on this band), so give yourself and your rig a break by operating QRP sometime soon. The results may surprise you....especially when someone tells you you're 5 by 9 and good pictures while your wattmeter barely moves off its zero mark. Really! We'll listen and watch for your replies to this suggestion (QRP). If it's accepted, we can begin a tally of "Who's who in QRP" in this column, and list their accomplishments. Maybe a few awards could be "wrangled". Any takers?

THE AUTЕК AUDIO FILTER AND SSTV

If you've experienced problems trying to copy SSTV pictures through excessive adjacent channel QRM (and who hasn't!), you should check out the Autek Research QF-1A - multi-function audio filter. This unit is a blast! The filter can be adjusted to sharply roll off frequencies above 2300 Hz or below 1200 Hz....or both, plus a very steep and deep notch (-70db) can also be inserted either between 1200 and 1500 Hz or wherever else it's needed. The unit connects between your station's receiver output and speaker/SSTV monitor input, and you're ready for action. There are front panel controls for setting received audio bandwidth - and that bandwidth's center audio frequency, plus another control for setting the -70db notch frequency. If the notch is not desired, merely turn its control to the lower limit (80 Hz) or upper limit (11,000 Hz). Other Autek filter functions include "peaking ability" for either high or low audio frequencies as necessary to avoid adjacent channel QRM. Nice, indeed. The unit I've been using lately does a creditable job of "enhancing" received pictures by boosting white frequencies slightly more than black frequencies (this effect is also readily noticeable on the station speaker). Whenever QRM gets rough, I can peak and notch my way through the interference and at least produce a poor but visible picture on the screen rather than missing views altogether. It's a pity such effective audio filters aren't an integral part of all SSTV monitors. The QF-1A is manufactured by Autek Research, Box 5127T, Sherman Oaks, California 91403.

RANDOM THOUGHTS

I continue to receive inquiries and requests for information on getting started in SSTV, so let's rehash some basic SSTV details. The least expensive means of viewing SSTV pictures involves building a 'scope adapter such as that described in the A.R.R.L. Handbook (not 1979 or 1980, however) or the A.R.R.L. "Specialized Communications Techniques" book. When used in conjunction with an ordinary oscilloscope, this unit produces relatively good P-7 displayed pictures. The easiest means of receiving SSTV pictures involves purchasing a used Robot, SEEC or Venus P-7 style SSTV monitor. This unit connects to the speaker terminals of the station's receiver, and SSTV pictures are reproduced very well. The most elaborate and efficient means of sending and receiving SSTV pictures is, of course, the Robot 400 digital scan converter. In addition to the Robot converter, your "full blown" setup will require a Fast Scan TV monitor (or a regular Fast Scan television which can be spared for use in the SSTV shack), a Fast Scan tv camera (surveillance type fine, or a suitable inexpensive unit is also available from Robot Research) and a relatively good quality audio tape recorder (for taping both received and home-generated SSTV views for later reuse and enjoyment).

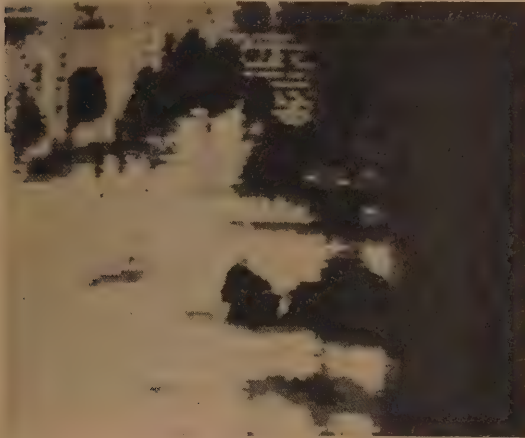
Since all frequencies used with SSTV are audio range, the station's existing transmitting and receiving gear perform those functions.

As with any new mode of communications, the newcomer can learn any and all remaining aspects by extended periods of listening, discussing and reading on that particular subject. The main frequencies to monitor are 14,230, 21,340, 28,680 and 3840 kHz. Any and all SSTVers will more than welcome your questions and provide additional assistance.

The Saturday SSTV Net meets on 14,230 kHz at 1800 GMT. This Net provides inestimable amounts of assistance to SSTV newcomers. Check in with us for additional details. You have nothing to lose, and a world of pleasure and enjoyment to gain.

Brooks, W1JKE, myself and 73 Magazine have once again coordinated efforts to sponsor another International SSTV Contest. Full details of the event will appear in either February or March 1980 73-Magazine. Contest times will be March 8, 1980 (Saturday) 1500 to 2300 GMT and March 9, 1980, 1500 to 2300 GMT. Since all of the hassles with last year's contest (CQ and QST bungling announcements as Brooks and I tried to "expand" the contest coverage) we've now promised allegiance to 73. They, in return are providing accurate contest coverage and assisting with provision of certificates to winners. Assuming all goes as planned this year (1980), the annual SSTV contest should be "back on its feet" and rolling toward success for many years to come.

That's about it for this time. We'll be looking for you on the air. Keep those pictures rolling and remember to watch for effective, meaningful applications for Slow Scan TV. 73, Dave Ingram, K4TWJ, Eastwood Village #1201 South, Rt. 11, Box 499, Birmingham, AL 35210.



Certainly not a good picture, but a useful application of SSTV as this is a view of Mobile, AL as hurricane Frederick ravaged the city. Ninety MPH winds practically tearing trees from their roots while torrential rains limit vision and distort the scene into nightmareish proportions.



Ten meter SSTV activity is on the up swing as this PIX from DK4HT shows. Reception was during early November and signal was S-9.



A little line noise (near bottom) but still excellent pix on 10 meters.

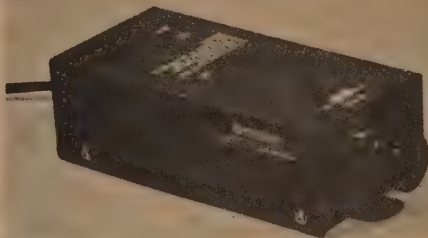
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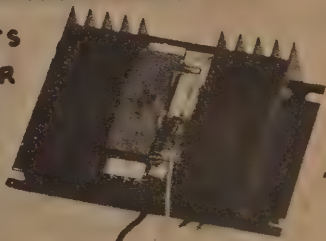
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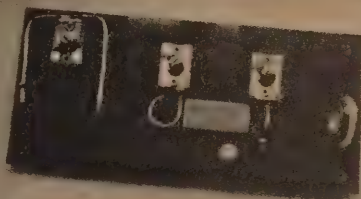
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73, TOM W6ORG

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19 YEARS ON ATV

12/79

CAN YOU CARTOON???? REWARD... A5 is looking for someone who can provide regular humor to the pages of our magazine. Below are a few samples of work provided by our original cartoonist who moved away in 1975, and we haven't found a replacement yet! Here is your chance to exercise your creative skills. You needn't be a professional artist, any reasonable effort should be enough. Drawings must be india ink on white paper, or drawing paper. I am looking for two or three cartoons per issue which are relevant to the major items in that issue (thus you will need to be in contact to find out the areas for each issue).

SOURCES OF ISSUES AND MAYBE BACK ISSUES

The following establishments and individuals receive a quantity of each issue for resale distribution:

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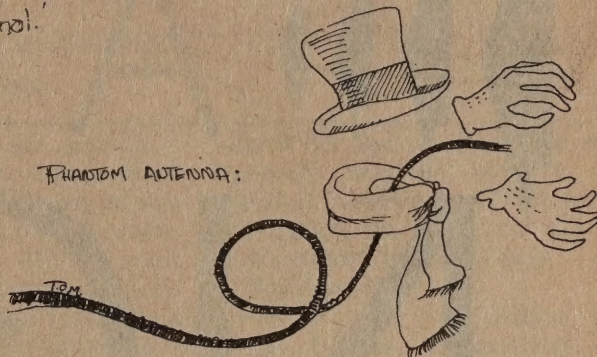
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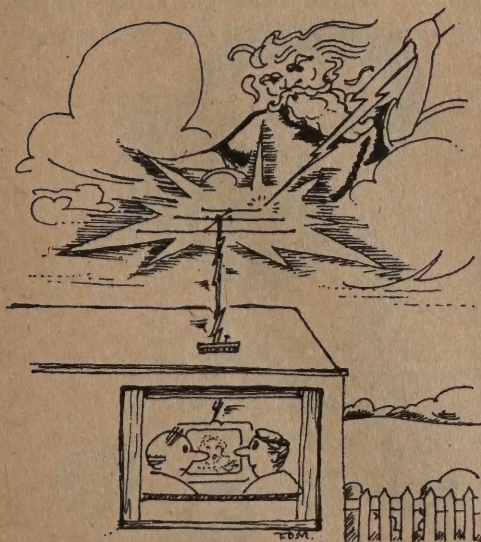
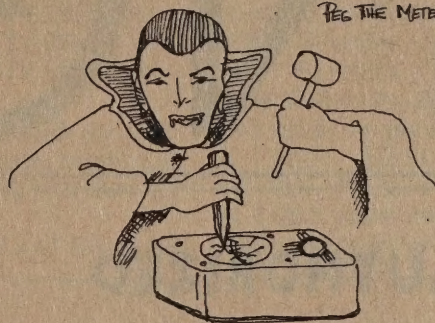
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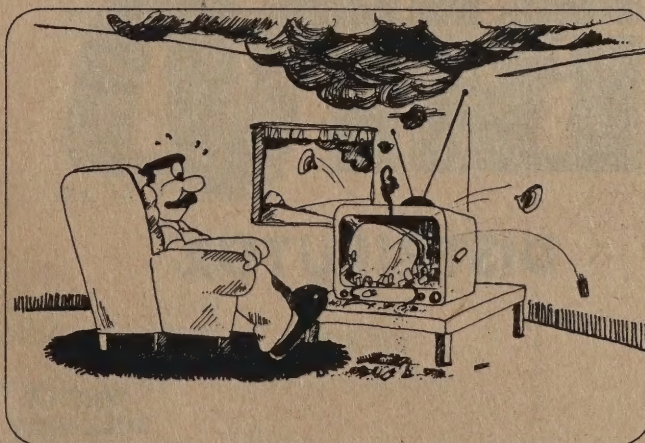
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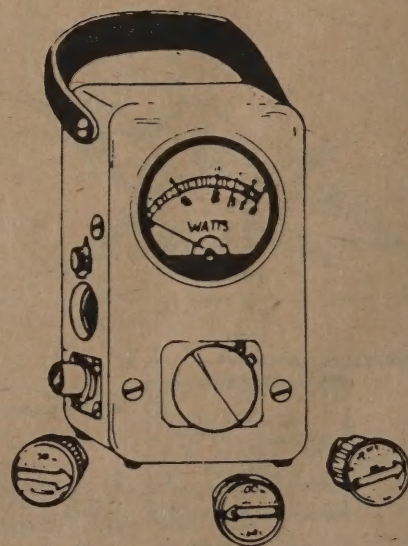
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Amateur Television Magazine is now offering a series of award certificates for SSTV activity ranging from a basic award through several levels of difficulty to a Master Scanner award. The beginning level certificate requires the SSTV operator to have confirmed five SSTV contacts on each of any five ham bands, a total of 25 contacts. The bands used for all the levels may be

any combination of the contestants

In addition to the normal frequency bands, the use of QSCAR may be used as 2 bands for any two OSCAR modes. i.e., 5 contacts via 450/144 oscar would count as 1 band for the basic

5 SSTV QSO's	on each of any 5 bands,	25 contacts
6 SSTV QSO's	on each of any 6 bands,	36 contacts
7 SSTV QSO's	on each of any 7 bands,	49 contacts
8 SSTV QSO's	on each of any 8 bands,	64 contacts
9 SSTV QSO's	on each of any 9 bands,	81 contacts
10 SSTV QSO's	on each of any 10 bands,	100 contacts
25 SSTV QSO's	on 10 meters,	25 contacts

certificate.

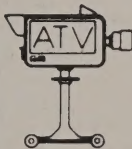
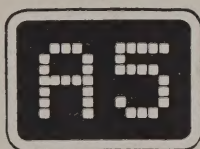
choosing. Additional awards are available for working increasing numbers of stations on increasing numbers of bands.

Each certificate is 8 x 11 inches and

suitable for framing. Numbered consecutively, each will attest to the operators proficiency. ATV Magazine will publish the names and calls of each certificate holder as issued.

The award levels are:

Applicants should send proof on QSO and \$1 for postage for each award to: SSTV MASTER SCANNERS AWARDS, PO Box 1347 Bloomington, IN 47401. Allow two weeks for processing and award preparation.



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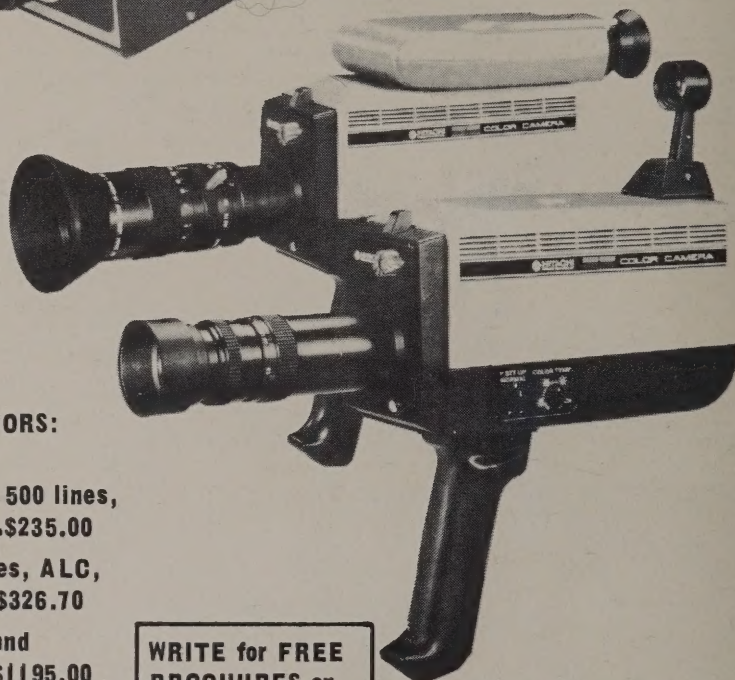
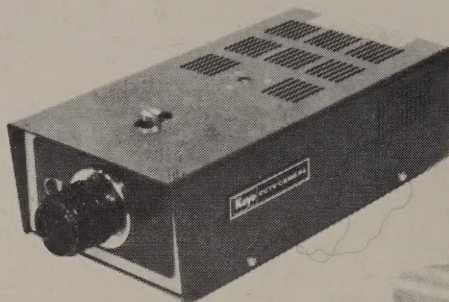
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